

AMENDMENTS TO THE CLAIMS

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-43. (Cancelled).

44. (Currently Amended) A method for screening a library of compounds to detect a biologically active compound by detecting intracellular translocation of a subunit of a component of an intracellular pathway affecting intracellular processes, which subunit exhibits a biological activity of the component, comprising:

(a) culturing one or more cells containing a nucleotide sequence coding for a hybrid polypeptide comprising a luminophore linked to the subunit under conditions permitting expression of the nucleotide sequence,

(b) incubating the one or more cells with at least one compound of the library of compounds,

(c) screening the library of compounds to determine whether the at least one compound of the library of compounds has a ~~for~~ biological function or biological effect on the subunit in the one or more cells, wherein translocation of the subunit in response to the at least one compound of the library of compounds determines that the at least one compound has a biological function or biological effect on the subunit, and

(d) measuring the light emitted from the luminophore in the incubated one or more cells and determining a variation with respect to the emitted light from said luminophore, such variation being indicative of the translocation of the subunit in said one or more cells and said translocation being indicative that said at least one compound of the library of compounds to be screened is biologically active with the component.

45. (Currently Amended) A method for screening a library of compounds to detect a biologically active compound by detecting intracellular translocation of a subunit of a component of an intracellular pathway affecting intracellular processes, which subunit exhibits a biological activity of the component, comprising:

- (a) culturing one or more cells containing a nucleotide sequence coding for a hybrid polypeptide comprising a luminophore linked to the subunit under conditions permitting expression of the nucleotide sequence,
- (b) incubating the one or more cells with at least one compound of the library of compounds,
- (c) screening the library of compounds to determine whether the at least one compound of the library of compounds has a ~~for~~ biological function or biological effect on the subunit in the one or more cells, wherein translocation of the subunit in response to the at least one compound of the library of compounds determines that the at least one compound has a biological function or biological effect on the subunit, and
- (d) extracting quantitative information relating to the translocation of said subunit by determining a variation in spatially distributed light emitted from said luminophore, such variation being indicative of the translocation of the subunit in said one or more cells and said translocation being indicative that said at least one compound of the library of compounds to be screened is biologically active with the component.

46. (Currently Amended) A method for screening a library of compounds to detect a biologically active compound by detecting intracellular translocation of a subunit of a biologically active polypeptide affecting intracellular processes, which subunit exhibits a biological activity of the polypeptide, comprising:

- (a) culturing one or more cells containing a nucleotide sequence coding for a hybrid polypeptide comprising a luminophore linked to the subunit under conditions permitting expression of the nucleotide sequence,
- (b) incubating the one or more cells with at least one compound of the library of compounds,
- (c) screening the library of compounds to determine whether the at least one compound of the library of compounds has a ~~for~~ biological function or biological effect on the subunit in the one or more cells, wherein translocation of the subunit in response to the at least one compound of the library of compounds determines that the at least one compound has a biological function or biological effect on the subunit,
- (d) measuring the light emitted by the luminophore in the incubated one or more cells and determining a variation with respect to the emitted light, such result or variation being

indicative of the translocation of the subunit in said one or more cells and said translocation being indicative that said at least one compound of the library of compounds to be screened is biologically active, and

(e) measuring the effect of said at least one compound of library of compounds on the inhibition/activation of biological activity of said subunit with the component.

47. (Previously Presented) A method according to claim 45, wherein the quantitative information relating to the translocation of the subunit is extracted from the recording or recordings according to a predetermined calibration.

48. (Previously Presented) A method according to claim 44, 45, or 46, wherein the compound to be screened for biological function or biological effect is a synthetic chemical compound.

49. (Previously Presented) A method according to claim 44, 45, or 46, wherein the compound is a drug whose affect on an intracellular pathway is to be determined.

50. (Previously Presented) A method according to claim 44, 45, or 46, wherein the intracellular pathway is an intracellular signaling pathway.

51. (Previously Presented) A method according to claim 44, 45, or 46, wherein the luminophore is a fluorophore.

52. (Previously Presented) A method according to claim 44, 45, or 46, wherein the luminophore is a Green Fluorescent Protein (GFP).

53. (Previously Presented) A method according to claim 52, wherein the GFP has the F64L mutation.

54. (Previously Presented) A method according to claim 52, wherein the GFP is a GFP variant selected from the group of consisting of F64L-GFP, F64L-Y66H-GFP, F64L-S65T-GFP, and EGFP.

55.-72. (Cancelled)

73. (New) A method according to claim 44, 45, or 46, wherein the light emitted from the luminophore is obtained by automated image acquisition.

74. (New) A method according to claim 44, 45, or 46, wherein the cells are fixed prior to light emitted from the luminophore being measured or used in determining the variation.

75. (New) A method according to claim 44, 45, or 46, wherein the cells are cultured and incubating with the at least one compound of the library of compounds in a well plate.

76. (New) A method according to claim 44, 45, or 46, further comprising fixing the one or more cells of the cell culture.

77. (New) A method according to claim 44, 45, or 46, further comprising selecting the one or more cells of the cell culture to be stable cells that are stably transformed with the nucleotide sequence coding for the hybrid polypeptide.

78. (New) A method according to claim 44, 45, or 46, wherein the component is a protein.

79. (New) A method as in claim 78, wherein said at least a subunit of the component is substantially the entire protein.

80. (New) A method as in claim 44, 45, or 46, further comprising recording a plurality of digital images of the light emitted from the luminophore.

81. (New) A method as in claim 80, further comprising implementing a digital filtering method on the plurality of digital images, said filtering method being selected from the group consisting of smoothing, sharpening, edge detection, and combinations thereof.

82. (New) A method as in claim 80, further comprising implementing a spatial frequency method on the plurality of digital images, said spatial frequency method being selected from Fourier filtering, image cross-correlation, image autocorrelation, object finding, object classification, color space manipulation for visualization, and combinations thereof.